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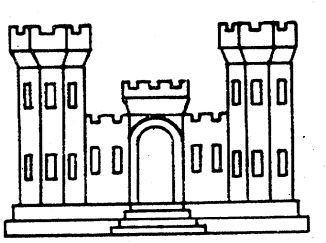
SURVEY (REVIEW OF REPORTS) OF

CAPE PORPOISE HARBOR

MAINE



AUTHORITY-THIS REPORT IS SUBMITTED IN COMPLIANCE WITH RESOLUTION, ADOPTED 19 OCTOBER, 1945, BY THE COMMITTEE ON RIVERS AND HARBORS OF THE HOUSE OF REPRESENATIVES, UNITED STATES CONGRESS.

U. S. ENGINEER OFFICE
BOSTON, MASS.
5 APRIL. 1946.

COPY NO. 17

CORPS OF ENGINEERS, U.S. ARMY

CAPE PORPOISE HARBOR
MAINE

IN 1 SHEET

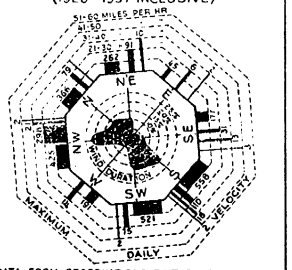
SCALE 1:2000

100 0 100 200 300 400 500 600 700 800 FT.

U.S. ENGINEER OFFICE, BOSTON, MASS., 28 MARCH 1948

APPROVED:

WIND DIAGRAM FOR PORTLAND, MAINE
(1928 – 1937 INCLUSIVE)



DATA FROM OBSERVATIONS BY THE U.S. WEATHER BUREAU AT PORTLAND STATION, PORTLAND, MAINE

TABLE OF PROBINGS

PROB	RATE	DEPTH	DESCRIPTION	PROB	RATE	DEPTH	DESCRIPTION
1	3.0	10.1	SOFT TO 9.9	26	+3.5	7.5	HARD GRAVEL
2	+0.3	11.0	SOFT MUD	27	+3.5	5.0	HD. GRAVEL TO PROBABLE LEDGE
3	0.0	11.0	MUD - SOFT TO 11.0	28	+3.5	5.9	HD. GRAVEL TO PROBABLE LEDGE
4	+0.5	10.1	MUD - CLAY - SOFT TO 9.0 - HD. SANDY CLAY	29	+3.0	10.0	MUD - HD. GRAVEL - SOFT TO +2.0
5	+1.0	10.7	MUD - SANDY CLAY - SOFT TO 7.0 - HD. TO 9.0 - SOFT	30	+2.5	7.2	MUD - CLAY - POSS. LEDGE - SOFT TO 0.5
6	+0.5	10.1	MUD - CLAY - SOFT TO 10.1	31	+2.5	10.0	SOFT TO 10.0
7	+0.7	10.0	MUD - CLAY - SOFT TO 10.0	32	+2.5	9.5	MUD - POSS. LEDGE - SOFT TO 9.5
8	+0.9	10.0	MUD - CLAY - GR. - SFT. TO 2.0 HD. TO 8.5 SFT. TO 10.0	33	+2.5	8.2	MUD - REFUSAL - SOFT TO 8.2
9	+1.0	10.3	MUD - CLAY - SOFT TO 8.0 - HD. TO 10.0	34	+2.4	8.3	MUD - CLAY - POSS. LEDGE - SOFT TO 0.5
10	+0.9	10.0	SOFT TO 7.0 - HD. TO 8.5 - SOFT TO 10.0	35	+2.4	7.8	MUD - CLAY - POSS. LEDGE - SOFT TO 2.8
11	+1.0	10.0	SOFT TO 10.0 - MUD - CLAY	36	+2.3	10.0	SOFT TO 10.0
12	+1.0	10.0	MUD - BLUE CLAY - SOFT TO 7.0 - HD. TO 10.0	37	+2.3	5.3	MUD - GR. - POSS. ROCK - SOFT TO 3.8
13	+1.0	10.0	SOFT TO 10.0 - MUD - CLAY	38	+2.3	10.0	MUD - CLAY - SOFT TO 4.7
14	+1.0	10.0	MUD - CLAY - GR. - SOFT TO 6.0 - HARD	40	+2.3	10.0	MUD - CLAY - SOFT TO 7.0
15	+0.8	10.0	MUD - BLUE CLAY - SOFT TO 3.0 - HD. TO 10.4	41	+2.3	8.0	MUD - CLAY - POSS. LEDGE
16	+0.7	10.4	MUD - BLUE CLAY - SOFT TO 8.0 - HARD	42	+2.3	10.0	MUD - SANDY CLAY - STONES
17	+1.0	10.0	MUD - BLUE CLAY - SOFT TO 7.0	43	+2.3	10.2	MUD - SANDY CLAY - SOFT CLAY
18	+1.0	10.7	MUD - BLUE CLAY - SOFT TO 7.5 - HARD	44	+2.2	10.0	MUD - SANDY CLAY
19	+1.0	10.5	MUD - BLUE CLAY - SOFT TO 8.0 - HARD	45	+2.2	9.8	MUD - SANDY CLAY - POSS. LEDGE
20	+1.2	10.0	MUD - BLUE CLAY - SOFT TO 4.8	46	+2.2	10.6	MUD - HD. SANDY CLAY - SOFT TO 1.8
21	+1.5	10.0	MUD - CLAY - GR. - SOFT TO 3.5 - HD. TO 8.5 - GR.	47	+2.2	10.0	MUD - HD. GRITTY CLAY
22	+2.1	10.0	MUD - CLAY - SOFT TO 10.0	48	+2.2	10.0	MUD - CLAY - GRITTY CLAY
23	+2.1	10.0	SOFT TO 5.4 - MUD - BLUE CLAY	49	+2.2	10.0	SOFT TO 2.8 - MUD - SANDY CLAY
24	+2.0	10.1	MUD - CLAY - SOFT TO 10.0	50	+2.2	10.0	SOFT TO 2.8 - MUD - HD. SANDY CLAY
25	+3.5	6.0	VERY HARD	38	+2.3	10.0	MUD - SAND - CLAY

CAPE PORPOISE

CAPE PORPOISE VILLAGE

Granite Retaining Wall

DESIRED IMPROVEMENT: CHANNEL, 100-FT. WIDE AND 6-FT. DEEP AT MEAN LOW WATER.

SHORE

Ledge Outcrop

CROP

WET

BICKFORDS ISLAND

A U.S.C.&G.S. standard disk, stamped "3/1919" set in highest point of ledge on first rocky point, north of mainland adjacent to Town Wharf. It is 12' west of large ledge dome outcrop in rock garden, just north of dining room "The Porpoise". The elevation is 21.06' above M.L.W.

BM 3

BM 1

TOWN WHARF

NORTH BASE

SOUTH BASE

COVE

NEGRO

NEGRO ISLAND

EXISTING

PROJECT

COMBINED CHANNEL AND ANCHORAGE DREDGED TO 15.0 FT. AT M.L.W.

FLOOD

EBB

MILK ISLAND

MILK

ENTRANCE CHANNEL THROUGH BAR DREDGED TO 18.0 FT. AT M.L.W. LEDGES AT OUTER END BETWEEN GOAT AND FOLLY ISLANDS EXCAVATED TO 18.0 FT. AT M.L.W.

GOAT ISLAND

GOAT

GOAT HD. LIGHT

SAVIN BUSH ISLAND

SAVIN

Rocky

THE BAR

Ledges removed to 18' at M.L.W.

BOLT

BASS

BASS ISLAND

FOLLY

SEA

FOLLY ISLAND

TRACED FROM U.S.C.&G.S. CHART NO. 1205

OLD ORCHARD BEACH

SACO BAY

EAGLE ID.

WOOD ID.

RAM ID.

BIDDEFORD POOL

SACO

SACO RIVER

BIDDEFORD

LITTLE RIVER

BATSON RIVER

CAPE PORPOISE

STAGE ID.

GOAT ID.

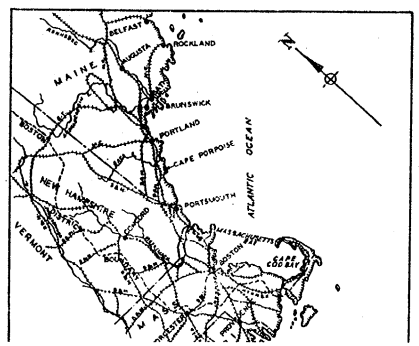
BICKFORD ID.

PORPOISE COVE

GOOSE ROCKS

KENNEBUNKPORT

VICINITY MAP
SCALE IN FEET



LEGEND

MEAN HIGH WATER ..... LEDGE

MEAN LOW WATER .....

6-FT. CURVE OF DEPTH .....

12-FT. CURVE OF DEPTH .....

15-FT. CURVE OF DEPTH .....

16-FT. CURVE OF DEPTH .....

18-FT. CURVE OF DEPTH .....

SOUNDINGS, SHOWN THUS, 7.2. ELEVATIONS ABOVE M.L.W., SHOWN THUS, +2.4.

PROBINGS SHOWN THUS .....•42

NOTE: THE SURVEY WAS MADE IN MARCH, APRIL AND MAY, 1942. DEPTHS ARE EXPRESSED

SURVEY (REVIEW OF REPORTS) ON
CAPE PORPOISE HARBOR, MAINE

Syllabus

The district engineer is of the opinion that relief from the existing congestion in the upper portion of Cape Porpoise Harbor is of sufficient importance to general navigation to warrant Federal participation in extending the anchorage area. He recommends modification of the existing project for Cape Porpoise Harbor to provide a channel 100 feet wide and 6 feet deep at mean low water extending upstream from the head of the existing Federal project for a distance of about 2,000 feet, at an estimated cost of $61,500 for new work and $1,500 annually for maintenance, provided local interests can contribute one-third of the cost of the project, but not in excess of $20,000, and agree to hold and save the United States free from all claims for damages attributable to the execution of the work.

War Department,
United States Engineer Office,
Boston 16, Massachusetts,
5 April 1946.

Subject: Survey (Review of Reports) on Cape Porpoise Harbor, Maine.

To: The Chief of Engineers, U. S. Army, Washington, D. C. - through the Division Engineer, New England Division, Boston 10, Mass.

1. Authority.- This report is submitted in compliance with the following resolution adopted 19 October 1945, by the Committee on Rivers and Harbors of the House of Representatives, United States Congress:

> RESOLVED BY THE COMMITTEE ON RIVERS AND HARBORS OF THE HOUSE OF REPRESENTATIVES, UNITED STATES, That the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review the reports on Cape Porpoise Harbor, Maine, submitted November 19, 1943, and prior reports, with a view to determining if the existing project should be modified in any way at this time.

2. Reports under review.- The essential features of the reports under review are given in the following tabulation:

Document No.	Authority	Type of Report	Improvement Considered	Recommendation	Action by Congress
H.Ex.Doc.No. 22,53rd Cong. 3d sess.	R&H Act, 17 August 1894	Prelim. Exam.	Enlargement of the harbor to increase its usefulness as a harbor of refuge.	Favorable	Authorized a survey.
H.Doc.No.160, 55th Cong., 3d sess.	H.Concurrent Resolution No. 50,20 Dec. 1898, 55th Cong.	Survey	Channel 200' wide and 16' deep at entrance, and channel and anchorage 15' deep, 600' wide, and about 3,000' long within the harbor.	Favorable	Adopted by R&H Act, 3 March 1899.
H.Doc.No.191, 59th Cong., 1st sess.	R&H Act, 3 March 1905.	Prelim. Exam. & Survey	Excavation of ledge rock in outer entrance channel to depth of 18', 200' wide.	Favorable	Adopted by R&H Act, 2 March 1907.
Not printed.	Resolution of Comm.on R&H, House of Rep. 11 Mar. 1941.	Prelim. Exam.	Enlargement of existing anchorage facilities.	Favorable	Authorized a survey.
Not printed.	do	Survey	Channel 100' wide and 6' deep from head of Federal project in Cape Porpoise Hbr. to head of Porpoise Cove.	Unfavorable	---

3. Description.- Cape Porpoise Harbor, which lies entirely within the town of Kennebunkport, Maine, is located near the southern extremity of the coast of Maine, 27 miles by water southwest of Portland and about the same distance northeast of Portsmouth, N. H. The harbor is well protected from the prevailing storm winds and is easy of access, the entrance being marked by a lighthouse on Goat Island.

4. The harbor has been improved by the United States to provide an entrance channel 18 feet deep and 190 feet wide between Goat and Folly Islands, thence 16 feet deep and 200 feet wide for a length of 450 feet, thence 16 feet deep and varying in width from 200 to 500 feet in length of 480 feet, thence 15 feet deep with a maximum width of 600 feet in a length of 2,150 feet. The entire work was completed in 1908.

Since that time the entrance channel has remained stable, but the dredged area within the harbor has narrowed somewhat, and shoaled to controlling depths ranging from about 13 feet in the lower end to about 10 feet in the upper end. There is an available channel from the harbor entrance to Town Wharf on Bickfords Island with a controlling depth and width, at mean low water, of 11 feet and 100 feet, respectively. Upstream of Town Wharf, at which the Federal project ends, the harbor terminates in a small cove, about 1/2 mile in length, which is for the most part a mud flat exposed at low tide.

5. The mean and spring ranges of tide at Cape Porpoise Harbor are 8.7 and 9.9 feet, respectively. There are no bridges crossing the harbor. The locality is shown on U. S. Coast and Geodetic Survey Chart No. 1205 and on the map accompanying this report. All prior reports of the War Department relative to Cape Porpoise Harbor are listed in paragraph 2 above. The improvement considered in the present report would not result in any changes in the shore lines in this locality. No questions of water power, flood control, or other related subjects are involved in the improvement under consideration.

6. Tributary area.- The town of Kennebunkport constitutes the principal area tributary to the harbor. It has no commercial importance and is fairly remote from any industrial center. Portland, with a population of about 75,000, is the nearest large city and the principal trading center for the surrounding area. In 1940 Kennebunkport had a population of 1,448 and estates valued at $2,221,558. The normal population of the area is greatly increased by summer residents attracted by the recreational facilities and the comfortable climate which the locality affords.

7. The chief activities of the permanent residents are fishing and catering to the summer trade. While the latter was formerly their

principal source of income, the fishing industry has lately assumed a very important position in their economic life. The harbor is the headquarters for the boats of about 60 or 70 local fishermen and lobstermen, and for the pleasure boats of permanent and summer residents. Visiting yachtsmen make it a port of call for supplies and it is also used as a harbor of refuge for fishing boats, pleasure craft, and the smaller coastal vessels. There are no rail facilities at Cape Porpoise Harbor, the nearest connection being at Kennebunk, about 6 miles distant. The locality is served by improved roads which provide excellent highway communication with all parts of the state.

8. Existing project.- The existing project, which was adopted by the River and Harbor Act of 3 March 1899, supplemented by Act of 2 March 1907, provides for a channel 16 feet deep at mean low water over a width of 200 feet through the bar, the dredging of a combined channel and anchorage between the bar and the wharf about 3,000 feet long, 15 feet deep at mean low water, with a maximum width of 600 feet, and the removal of ledge rock between Goat and Folly Islands so as to give a straight entrance channel 200 feet wide and 18 feet deep at mean low water. The project was completed in 1908, since which time no work has been done. The total expenditures under the project amounted to $118,501.15, all of which was for new work. In House Document No. 467, 69th Congress, 1st session, the Chief of Engineers recommended the abandonment of the project, but no action was taken by Congress.

9. Local cooperation.- There have been no prescribed conditions of local cooperation or cash contributions toward the improvement of Cape Porpoise Harbor.

10. Other improvements.- Except for landing facilities at the head of the improved channel, which were constructed at public expense, no improvements in the interest of navigation have been made by either state or local interests.

11. Terminal and transfer facilities.- Present terminal facilities at Cape Porpoise Harbor consist of a single wharf located on Bickfords Island at the head of the Federal improvement. This wharf is owned by the town of Kennebunkport and is open to the public without charge. It is an open pile timber structure fronting on the channel for a length of about 180 feet, with depths alongside of about 3 to 10 feet at mean low water. Auxiliary equipment consists of three landing floats and two small hand operated hoists for handling supplies to and from boats. Gasoline, fuel oil, water and marine supplies are available at the wharf. This wharf appears to be adequate for the needs of the community.

12. Improvement desired.- In order to ascertain the nature and extent of the improvement desired, a public hearing was held at Cape Porpoise, Maine on 21 March 1946. Among those in attendance at the hearing were the Chairman of the Board of Selectmen and a large number of interested persons, mostly local fishermen.

13. The improvement specifically desired by local interests is a channel 100 feet wide and 6 feet deep at mean low water, extending upstream from the northerly end of the Federal project, for a distance of about 2,000 feet. While this improvement was referred to at the public hearing as a channel, its intended use is for the mooring of small craft which now use the main anchorage. The principal arguments advanced by the proponents of this improvement at the hearing in 1941, and referred to at the recent hearing are summarized as follows:

(a) The large increase in the number of small craft which use the harbor practically precludes its use by the larger vessels, and deterioration of the anchorage in both depth and width has accentuated this condition.

(b) A mooring area in the upper harbor would greatly relieve the congestion in the main anchorage, provide a safer and more accessible anchorage for small boats, and permit the maintenance of a fairway for

vessels moving between the entrance of the harbor and the Town Wharf.

(c) Because of the congested condition in the harbor, great difficulty is experienced in bringing in a vessel of any size for anchorage or to the Town Wharf. This condition, which has become acute in recent years, practically prevents its use by large yachts and commercial vessels, and has resulted in the closing of a large ship outfitting store which at one time enjoyed a prosperous business supplying these vessels.

(d) Cape Porpoise Harbor is the only harbor of any consequence between Cape Elizabeth and Portsmouth which can be used by the largest boats of an important canning company located in Portland, but these vessels are reluctant to enter the harbor during the summer season because of the large number of small yachts and fishing boats which are anchored there most of the time.

(e) Consummation of the desired improvement would result in the reopening of a ship outfitting store, increased pay rolls through greater business activity in the harbor, and the possible establishment of new industries, such as a lobster or crab canning plant.

14. In addition to the above arguments, a statement was read setting forth the plan of a citizen of the town to erect an ice making and quick freezing plant costing about $120,000, at Cape Porpoise Harbor if the proposed improvement is carried through.

15. The town of Kennebunkport has voted to appropriate the sum of $16,000 to be given to the Federal Government to be used toward the cost of the project. It was pointed out at the hearing that the cost of dredging has increased since the unfavorable report of 1942 was submitted, and that the present estimate of the amount required to be furnished locally would be $20,000. It was the unanimous opinion of the local citizens present that an additional $4,000 would be voted.

16. Commerce and vessel traffic.- There is no freight traffic in Cape Porpoise Harbor at the present time. Formerly there was a con-

siderable commerce in such commodities as coal, bricks, clay and fish, which reached its peak of about 50,000 tons in 1907-08, following the completion of an electric railroad 22 miles long to Sanford, Maine. This commerce, with the exception of fish and lobsters, declined rapidly thereafter and finally disappeared with the discontinuance of the railroad about 25 years ago.

17. The present traffic in the harbor consists of such uses as are made of it by local and visiting pleasure craft, fishing boats, and a number of small vessels which use it as a harbor of refuge. Local interests estimate that between 60 and 70 fishing boats, with drafts up to 5 feet, are based in the harbor, and that during the recreational season, which lasts about four months, about 150 boats from 20 to 100 feet in length pass in and out of the harbor each day. Many of these boats obtain supplies at the store located on the Town Wharf.

18. Difficulties attending navigation.- According to local interests, the principal difficulty attending navigation results from a lack of anchorage space due to the increased use of the harbor by small pleasure craft during the recreational season and by the larger number of fishing boats now based there. This condition, which is accentuated somewhat by deterioration of both depth and width of the harbor, is said to interfere seriously with the maneuvering of boats, particularly the larger vessels.

19. Survey.- A survey of Cape Porpoise Harbor, including Porpoise Cove, was completed in May, 1942. The results of this survey, which included triangulation, topography, soundings, probings, and tidal observations, are shown on the accompanying map, titled "Cape Porpoise Harbor, Maine", in one sheet, scale 1:2,000; File No. 1075 D-6-4. The material to be dredged within the limits of the improvement considered in this report would apparently be mud and clay.

20. Plan of improvement.- The plan of improvement considered in this report and indicated on the accompanying map, is the dredging of a mooring area in Porpoise Cove, 100 feet wide and 6 feet deep at mean low water, extending upstream from the northerly end of the existing Federal project for a distance of about 2,000 feet. The presence of rock and other hard material in the upper cove precludes the extension of the improvement into this area on the basis of any benefits which can be foreseen at the present time. The estimated cost of the desired mooring area is given below:

Excavation, 72,300 cu. yds. @ 85¢ per cu. yd. . .	$61,500
Estimated annual maintenance cost	1,500

The above estimate includes engineering and contingency costs. The quantity is in terms of place measurement with an allowance of one foot for overdepth. The unit price is based on the work being done by contract and the disposal of the excavated material at sea.

21. Aids to navigation.- According to information furnished by the U. S. Coast Guard, the proposed improvement would involve the establishment of three additional buoys at an estimated first cost and annual maintenance cost of $450 and $120 respectively.

22. Analysis of economic justification.- The economic life of the improvement outlined in paragraph 20 above is estimated at 40 years, and the economic cost as an annual carrying charge has been computed on that basis. Amortization of the cost of aids to navigation is based on an economic life of 15 years for these structures. The analysis of cost is given below:

(a) Federal investment:

(1) Estimated cost of improvement	$ 61,500
Local cooperation (1/3 of initial cost, not to exceed $20,000)	20,000
Engineer Department first cost	41,500

(2) Estimated expenditure by U. S. Coast Guard for aids to navigation . . . . . $ 450

(3) Total Federal investment . . . . . $ 41,950

(b) Federal annual carrying charge:

(1) Interest at 3% on Item (a)(3) . . . . . $ 1,258

(2) Amortization of Item (a)(1) (40 years at 3%) 556

(3) Amortization of Item (a)(2) (15 years at 3%) 24

(4) Annual maintenance of mooring area 1,500

(5) Annual maintenance of aids to navigation . . 120

(6) Total Federal annual carrying charge . . . . $ 3,458

(c) Non-Federal investment:

(1) Local cooperation (See Item (a)(1) above) . . $ 20,000

(2) Total Non-Federal investment 20,000

(d) Non-Federal annual carrying charge:

(1) Interest at 3½% on Item (c)(2) . . . . . $ 650

(2) Amortization of Item (c)(2) (40 years at 3½%) 237

(3) Total Non-Federal annual carrying charge . . $ 887

(e) Total carrying charge:

(1) Federal annual carrying charge . . . . . $ 3,458

(2) Non-Federal annual carrying charge 887

(3) Total annual carrying charge . . . . . $ 4,345

23. The chief benefits to be expected from the desired improvement are concerned primarily with providing safer and more commodious harbor facilities for transient yachts and commercial vessels requiring the deeper water which the existing anchorage affords. By extending to a much larger number of vessels the excellent shelter and convenience of location afforded by Cape Porpoise Harbor, the improvement may be expected to result in a materially greater use of the harbor and a sub-

stantial increase in the business of servicing and supplying these vessels. While it is impossible to evaluate the benefits in definite monetary terms, it is believed that they would be of sufficient importance to warrant adoption of the proposed improvement with a local contribution in the amount recommended herein.

24. Discussion and conclusions.- Cape Porpoise Harbor, located about 27 miles northeast of the Maine-New Hampshire state line, is one of the best small-boat harbors on this section of the coast. It is conveniently located for the traffic of yachts and fishing vessels moving between Portland, Maine and Portsmouth, N. H. Although limited in size, it possesses the essential features of the ideal harbor of refuge, namely, easiness of access and a well sheltered anchorage. It was formerly improved by the United States to encourage the development of commerce and to increase its facilities as a harbor of refuge. While the general commerce of the harbor has long since disappeared, it has retained its importance as a harbor of refuge for a large number of small craft operating in the general locality and, in addition, it has become an increasingly important center for the carrying on of commercial fishing.

25. The Federal improvement, which was completed in 1908, resulted in the enlargement of the entrance of the harbor, with depths of 16 and 18 feet at mean low water, a combined channel and anchorage within the harbor, with a depth of 15 feet at mean low water. Since that time some shoaling of the inner harbor has occurred and there has been a slight encroachment by the mud flats which border it closely on both sides. The existing depths in this area vary from 10 to 13 feet in a width of about 500 feet. The usable area, including that of the channel, is approximately 22 acres. The size and number of vessels that can be accommodated in the existing anchorage is limited by its size and shape

and by the fact that a fairway must be maintained through it for the passage of vessels.

26. The natural advantages afforded by Cape Porpoise Harbor, together with the rapid growth which has occurred in recreational boating, have resulted in a much greater use of the anchorage by yachts and fishing craft, transient as well as local. This condition, which lasts throughout the summer season, has become acute in recent years with the result that many of the deeper draft vessels are prevented from using the harbor because of inadequate anchorage space. To relieve this condition, local interests desire the dredging of a mooring area for the smaller vessels, 100 feet wide and 6 feet deep at mean low water, extending into Porpoise Cove. This improvement, it is said, in addition to making a larger area available in the main anchorage for the deeper draft vessels, would have the further beneficial effect of restoring to the community the business of servicing those vessels which it formerly enjoyed.

27. An inspection of the harbor, made 21 August 1941, showed the anchorage to be fairly well filled by small craft, with estimated drafts of up to 5 feet. It was also observed that these vessels were in sufficient number to curtail the use of the anchorage by larger vessels, and that most of them were of a size which could be easily accommodated in the desired mooring area. The result of this inspection, therefore, seems to bear out the claims of local interests, and to warrant favorable consideration of the plan of improvement as outlined in paragraph 20.

28. On 21 March 1946 there were counted twenty-eight fishing vessels, with drafts of up to about 5 feet, at anchor in the harbor. In addition, there were a number of boats out fishing that are based in the harbor. Since 1941 the number of fishing vessels using the harbor

regularly has increased from about 30 to over 60. It was stated that new vessels are being built continually and that most of them are larger than those they replace.

29. The advantages of Cape Porpoise as a harbor of refuge are well known to the larger fishing vessels, such as trawlers and draggers. They frequently run into the harbor during stormy weather and would undoubtedly use it to discharge their catch if the fairway were not so congested. During the war the Coast Guard kept a crash boat at Cape Porpoise. This vessel was tied up at the Town Wharf when in port.

30. If the proposed improvement is made, local interests plan to erect and maintain an ice making plant and a quick freezing plant and other facilities incident to the same. This plant is estimated to cost $120,000 and in addition to adding taxable property to the town, it will afford employment to about 50 people. It would also enable fishermen, both local and from other areas, to dispose of their catch at advantageous prices.

31. In addition to improved harbor facilities, other benefits expected are increased revenues through greater harbor activities, the restoration of the business of servicing and supplying pleasure and fishing craft, and the possible establishment of a seafood cannery. While these benefits are purely local in character, and cannot be considered a certainty, they should be regarded as a reasonable possibility for which the desired improvement in some measure is justified.

32. Considering the present and prospective uses of the harbor, the district engineer is of the opinion that the improvement as outlined in paragraph 20 would adequately meet all requirements of navigation and prove of substantial value to the business interests of the community. He believes, however, that the resulting benefits would not be sufficiently general in character to warrant the United States undertaking

the improvement without a financial contribution by local interests commensurable with the local benefits involved. In 1942 local interests felt that in view of the large falling off of their summer recreational business due to the war, and the uncertainty as to when the improvement would be carried out, they would not be warranted in committing themselves to a financial contribution. With the cessation of hostilities and with the large growth in the local fishing industry, the citizens now see their way clear to participate in the project. Consequently, prior to the hearing, they voted to appropriate $16,000 as their share of the cost. This amount, being based on prices obtainable in 1941, is not considered sufficient under present conditions. However, the need being great and the interest high, assurance was given by those present at the hearing that an additional $4,000 would be forthcoming if required.

33. Recommendation.- The district engineer recommends modification of the existing project for Cape Porpoise Harbor, Maine by providing a channel 100 feet wide and 6 feet deep at mean low water, extending upstream from the head of the existing Federal project, for a distance of about 2,000 feet, as shown on the accompanying map, at an estimated cost of $61,500 for new work and $1,500 annually for maintenance; provided local interests contribute one-third the initial cost of the project, but not to exceed $20,000, and agree to hold and save the United States free from all claims for damages attributable to the execution of the work.

34. The work should be prosecuted at a rate sufficient to insure its completion within one year and the necessary funds should be provided in a single appropriation.

C. T. HUNT,
Colonel, Corps of Engineers,
District Engineer.

Inclosure:
Map

SUBJECT: Survey (Review of Reports) on Cape Porpoise Harbor, Maine

NEDGW (5 Apr 46) 1st Ind. CAT/bl

Division Engineer, New England Division, Boston 10, Mass., 19 Apr 1946

TO: Chief of Engineers, U. S. Army, Washington 25, D. C.
ATTENTION: SPEWR

1. The existing project for Cape Porpoise, Maine, provides for a channel 16 feet deep at mean low water over a width of 200 feet through the bar, the dredging of a combined channel and anchorage between the bar and the town wharf about 3,000 feet long, 15 feet deep at mean low water, with a maximum width of 600 feet, and the removal of ledge rock in the entrance channel, between Goat and Folly Island, to a depth of 18 feet at mean low water. This work was completed in 1908, since which time no work has been done.

2. Local interests have requested a modification of the existing project to provide an anchorage 100 feet wide and 6 feet deep at mean low water, extending upstream from the upstream limit of the existing project for a distance of approximately 2,000 feet, for the mooring of small craft to relieve the existing main anchorage for the deeper draft vessels.

3. The District Engineer recommends modification of the existing project as requested by local interests subject to the condition that local interests contribute one-third of the initial cost of the project, but not to exceed $20,000, and agree to hold and save the United States free from all claims for damages attributable to the execution of the work.

4. The estimated cost of the proposed work is $61,500 for new work and $1,500 annually for maintenance. Local cooperation can be expected.

5. I concur in the recommendation of the District Engineer.

D. L. WEART
Major General, U.S.A.
Division Engineer

1 Incl. - n/c

WAR DEPARTMENT

CORPS OF ENGINEERS, U.S.ARMY

CAPE PORPOISE

DESIRED IMPROVEMENT: CHANNEL, 100-FT. WIDE AND 6-FT. DEEP AT MEAN LOW WATER.

Granite Retaining Wall

SHORE

Ledge Outcrop

CROP

Ledge Outcrops

WET

Ledge Outcrop

BICKFORDS ISLAND

B.M.3

B.M.1

TOWN WHARF

Rock Outcrop

NORTH BASE

SOUTH BASE

NEGRO

NEGRO ISLAND

CAPE PORPOISE VILLAGE

CAPE PORPOISE HARBOR

EXISTING PROJECT

COMBINED CHANNEL AND ANCHORAGE DREDGED TO 15.0 FT. AT M.L.W.

FLOOD

EBB

—A U.S.C.&G.S. standard disk, stamped "3/1919" set in highest point of ledge on first rocky point, north of mainland adjacent to Town Wharf. It is 12' west of large ledge dome outcrop in rock garden, just north of dining room "The Porpoise". The elevation is 21.06' above M.L.W.

Ledge Outcrop

MILK ISLAND

MILK

ENTRANCE CHANNEL THROUGH BAR DREDGED TO 16.0 FT. AT M.L.W. LEDGES AT OUTER END BETWEEN GOAT AND FOLLY ISLANDS EXCAVATED TO 18.0 FT. AT M.L.W.

GOAT ISLAND

GOAT I.D. LIGHT

GOAT

SAVIN BUSH ISLAND

SAVIN

Rocky

Red Spindle

THE BAR

Ledge removed to 18' at M.L.W.

BOLT

BASS

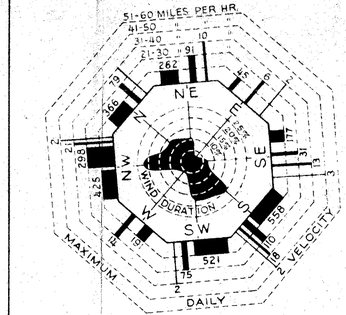
BASS ISLAND

FOLLY

SEA

FOLLY ISLAND

WIND DIAGRAM FOR PORTLAND, MAINE (1928–1937 INCLUSIVE)

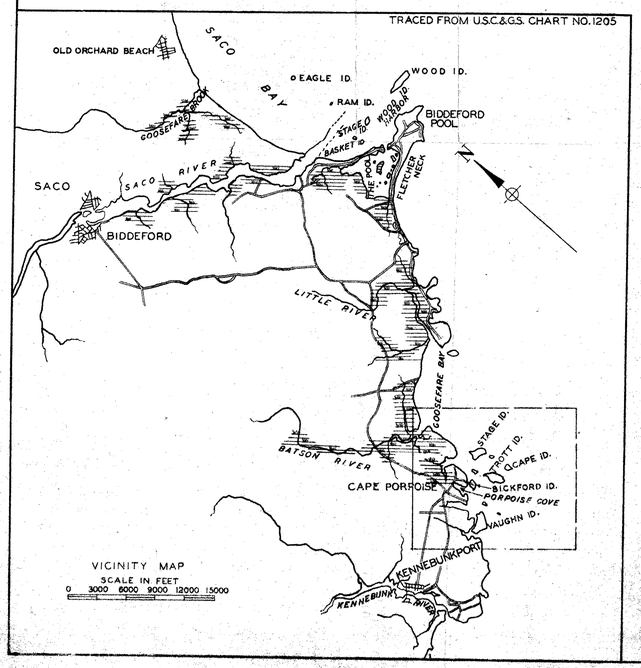


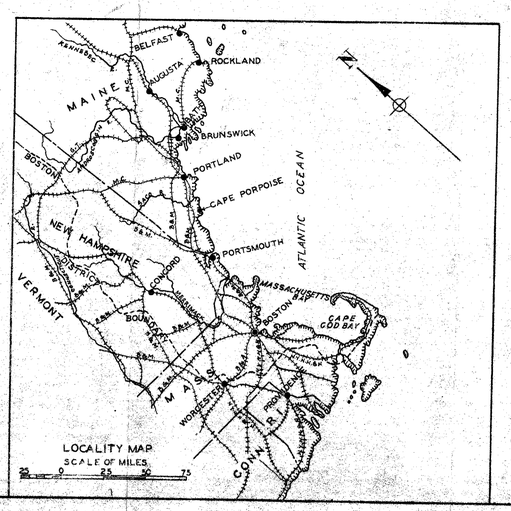
DATA FROM OBSERVATIONS BY THE U.S. WEATHER BUREAU AT PORTLAND STATION, PORTLAND, MAINE

TABLE OF PROBINGS

NO. OF PROB	WATER	PROB.	DESCRIPTION	NO. OF PROB	WATER	PROB.	DESCRIPTION
1	3.0	10.1	SOFT TO 9.9	26	+3.5	7.5	HARD GRAVEL
2	+0.3	11.0	SOFT MUD	27	+3.5	5.0	HD. GRAVEL TO PROBABLE LEDGE
3	0.0	11.0	MUD – SOFT TO 11.0	28	+3.5	5.9	HD. GRAVEL TO PROBABLE LEDGE
4	+0.5	10.1	MUD – CLAY – SOFT TO 9.0 – HD. SANDY CLAY	29	+3.0	10.0	MUD – HD. GRAVEL – SOFT TO +2.0
5	+1.0	10.7	MUD – SANDY CLAY – SOFT TO 7.0 – HD. TO 9.0 – SOFT	30	+2.5	7.2	MUD – CLAY – POSS. LEDGE – SOFT TO 0.5
6	+0.5	10.1	MUD – CLAY – SOFT TO 10.1	31	+2.5	10.0	SOFT TO 10.0
7	+0.7	10.0	MUD – CLAY – SOFT TO 10.0	32	+2.5	9.5	MUD – POSS. LEDGE – SOFT TO 9.5
8	+0.9	10.0	MUD – CLAY – GR. – SFT. TO 7.0 HD. TO 8.5 SFT. TO 10.0	33	+2.5	8.2	MUD – REFUSAL – SOFT TO 8.2
9	+1.0	10.3	MUD – CLAY – SOFT TO 8.0 – HD. TO 10.0	34	+2.4	8.3	MUD – CLAY – POSS. LEDGE – SOFT TO 0.5
10	+0.9	10.0	SOFT TO 7.0 – HD. TO 8.5 – SOFT TO 10.0	35	+2.4	2.8	MUD – CLAY – POSS. LEDGE – SOFT TO 2.8
11	+1.0	10.0	SOFT TO 10.0 – MUD – CLAY	36	+2.3	10.0	SOFT TO 10.0
12	+1.0	10.0	MUD – BLUE CLAY – SOFT TO 7.0 – HD. TO 10.0	37	+2.3	5.3	MUD – GR. – POSS. ROCK – SOFT TO 3.9
13	+1.0	10.0	SOFT TO 10.0 – MUD – CLAY	38	+2.3	10.0	MUD – CLAY – SOFT TO 4.7
14	+1.0	10.0	MUD – CLAY – GR. – SOFT TO 6.0 – HARD	40	+2.3	10.0	MUD – CLAY – SOFT TO 7.0
15	+0.8	10.0	MUD – BLUE CLAY – SOFT TO 5.0 – HD. TO 10.4	41	+2.3	8.0	MUD – CLAY – POSS. LEDGE
16	+0.7	10.4	MUD – BLUE CLAY – SOFT TO 5.0 – HARD	42	+2.3	10.0	MUD – SANDY CLAY – STONES
17	+1.0	10.0	MUD – BLUE CLAY – SOFT TO 7.0	43	+2.3	10.2	MUD – SANDY CLAY – SOFT CLAY
18	+1.0	10.7	MUD – BLUE CLAY – SOFT TO 7.5 – HARD	44	+2.2	10.0	MUD – SANDY CLAY
19	+1.0	10.5	MUD – BLUE CLAY – SOFT TO 6.0 – HARD	45	+2.2	9.8	MUD – SANDY CLAY – POSS. LEDGE
20	+1.2	10.0	MUD – BLUE CLAY – SOFT TO 4.8	46	+2.2	10.6	MUD – HD. SANDY CLAY – SOFT TO 1.8
21	+1.5	10.0	MUD – CLAY – GR. – SOFT TO 3.5 – HD. TO 9.5 – GR.	47	+2.2	10.0	MUD – HD. GRIT TY CLAY
22	+2.1	10.0	MUD – CLAY – SOFT TO 10.0	48	+2.2	10.0	MUD – CLAY – GRITTY CLAY
23	+2.1	10.0	SOFT TO 5.4 – MUD – BLUE CLAY	49	+2.2	10.0	SOFT TO 2.8 – MUD – SANDY CLAY
24	+2.0	10.1	MUD – CLAY – SOFT TO 10.0	50	+2.2	10.0	SOFT TO 2.8 – MUD – HD. SANDY CLAY
25	+3.5	6.0	VERY HARD	38	+2.3	10.0	MUD – SAND – CLAY

TRACED FROM U.S.C.&G.S. CHART NO. 1205





LEGEND

MEAN HIGH WATER ..... LEDGE

MEAN LOW WATER .....

6-FT. CURVE OF DEPTH .....

12-FT. CURVE OF DEPTH .....

15-FT. CURVE OF DEPTH .....

16-FT. CURVE OF DEPTH .....

18-FT. CURVE OF DEPTH .....

SOUNDINGS, SHOWN THUS, 7.2. ELEVATIONS ABOVE M.L.W., SHOWN THUS, +2.4

PROBINGS SHOWN THUS •42

NOTE: THE SURVEY WAS MADE IN MARCH, APRIL AND MAY, 1942. DEPTHS ARE EXPRESSED IN FEET AND TENTHS AND ARE REFERRED TO THE PLANE OF M.L.W. AS INDICATED BY THE BENCH MARK. B.M.1 IS A U.S.C.&G.S. STANDARD DISC STAMPED "1/1919" SET WITH STEM VERTICAL ON WEST EDGE OF LARGE ROCK LEDGE, LOCATED ON THE S.W. PART OF BICKFORDS ID., 38 FEET WEST OF PROMINENT BOULDER MONUMENT WITH TABLET AND 2 FEET N.W. OF OLD STONE PILE POST. THE ELEVATION IS 22.16 FEET ABOVE M.L.W. MEAN RANGE OF TIDE 8.7 FEET.

CAPE PORPOISE HARBOR
MAINE

IN 1 SHEET SCALE 1:2000

100 0 100 200 300 400 500 600 700 800 FT.

U.S. ENGINEER OFFICE, BOSTON, MASS., 28 MARCH 1946

APPROVAL RECOMMENDED:
John E. Allen
CHIEF ENGINEERING DIVISION

SUBMITTED:
BR. ENGINEER, RIVERS & HARBOR BRANCH

APPROVED:
COLONEL, CORPS OF ENGINEERS
DISTRICT ENGINEER

TRANSMITTED WITH REPORT DATED 5 APRIL 1946

DES. BY
DR. BY
TR. BY
CK. BY

FILE NO. 1075 D-6-4